

ASTM TECHNICAL DATA REPORT

Engineered Travertine Thin Veneer System
Independent laboratory performance summary + complete source reports

DOCUMENT	2026 Technical Data Report
PRODUCT	Engineered Travertine Thin Veneer System with embedded fiber mesh reinforcement
PHYSICAL / DURABILITY LAB	Natural Stone Institute (NSI), Oberlin, Ohio Report 25-0174.01-R0 Report date March 3, 2026
FIRE TEST LAB	SGS-CSTC Standards Technical Services Co., Ltd., Anji Branch Report AJFTS25008768R01_EN January 15, 2026

Purpose. This document is a concise architectural/specifier-facing summary of the supplied independent laboratory reports. The complete, unmodified laboratory reports are reproduced in the appendices for technical review and verification.

EliteAzure
Santa Rosa Beach, FL 32459
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1. Executive Technical Summary

The tested system was evaluated for surface burning characteristics, absorption and density, flexural strength, water tightness/permeability, freeze-thaw exposure, thermal shock exposure, and flatwise tensile strength. Results below are transcribed from the supplied laboratory reports; where a laboratory modified a standard procedure, the modification is identified rather than presented as strict full-method compliance.

TEST / PROPERTY	VERIFIED RESULT	SPECIFIER INTERPRETATION
ASTM E84-2024	FSI 20; SDI 200	Meets Class A interior wall & ceiling finish index limits cited by SGS.
ASTM C97/C97M-25	Absorption 9.39% Density 120.0 lb/ft ³ (1,914 kg/m ³)	System-level values for specimens as tested.
ASTM C880/C880M-25	Dry: 600 psi lengthwise; 520 psi widthwise Wet: 190 psi lengthwise; 240 psi widthwise	Flexural response is directional and condition-dependent.
ASTM C666/C666M-15 + C297	100 freeze-thaw cycles; 256.4 psi mean tensile strength after 100 cycles	No visible spalling, cracking, delamination or other deleterious effects reported after exposure.
ASTM C484-20 + C297	10 thermal-shock cycles; 312.0 psi mean post-exposure tensile strength	No visible degradation reported; mean was +2.3% vs. control.
ASTM C1185-23 §11	Water droplets observed on underside within first minute	Panel is not a standalone water barrier; exterior assemblies require WRB/flashing/drainage design.

Important: The NSI report states that no ASTM performance criteria were provided for this engineered thin veneer system; the values are reported as obtained. This report therefore does not convert laboratory values into blanket code approval, structural design capacity, or a warranty of assembly performance.

2. Independent Test Program

Two independent reports supplied by Elite Azure form the technical basis of this document. The test standards, report identifiers, specimen conditions and reported deviations should be reviewed together with the complete source reports in the appendices.

STANDARD	EVALUATION	LAB / REPORT	KEY CONDITION / NOTE
ASTM E84-2024	Surface burning	SGS AJFTS25008768R01_EN	Self-supporting tunnel specimen; tested face identified in SGS report.
ASTM C97/C97M-25	Absorption & bulk specific gravity	NSI 25-0174.01-R0	Alternate specimen dimensions due to engineered panel production dimensions.
ASTM C1185-23 §11	Water tightness	NSI	0.5 in. water head used instead of 2 in. because of thinness/flexibility.
ASTM C880/C880M-25	Flexural strength	NSI	Longer test span used to permit flexible panel to reach documented cracking failure.
ASTM C666/C666M-15	Freeze-thaw exposure	NSI	Procedure B; 100 cycles; evaluation every 25 cycles.
ASTM C484-20	Thermal shock	NSI	High temperature adjusted to 170°F; 10 cycles.
ASTM C297/C297M-16	Flatwise tensile strength	NSI	Control and post-environmental-exposure series.

Specification language: use “tested in accordance with” only where the source laboratory does so. For NSI tests explicitly described as “in general accordance with” or containing deviations, retain that qualification in project submittals.

3. Fire Performance - ASTM E84-2024

SGS-CSTC Standards Technical Services Co., Ltd., Anji Branch tested the submitted “Travertine Stone Veneer” under ASTM E84-2024. SGS reports a Flame Spread Index (FSI) of 20 and Smoke-Developed Index (SDI) of 200. The report states that these values meet the Class A interior wall and ceiling finish category limits it cites: FSI 0-25 and SDI 0-450.

PARAMETER	REPORTED VALUE	CLASS A LIMIT CITED BY SGS
Flame Spread Index	20	0-25
Smoke-Developed Index	200	0-450
Classification	Class A interior wall & ceiling finish category	Per classifications reproduced in SGS report

SGS specimen details include a reported thickness of 3.4 mm and area density of 5.6 kg/m². The specimen was self-supporting and placed on the tunnel ledges; the assembled test specimen measured 7,500 mm × 600 mm × 3.4 mm.

Design limitation. ASTM E84 characterizes surface burning behavior under the test conditions. The Class A result should not be represented as a fire-resistance rating, hourly-rated wall assembly, noncombustibility determination, or approval of every substrate/adhesive/assembly combination. Project teams should evaluate the complete wall assembly and applicable code requirements.

4. Physical & Mechanical Properties

NSI tested full-thickness production samples supplied by Elite Azure. The laboratory states that specimens were tested as received except for resizing, preconditioning and/or assembly required by the applicable methods.

PROPERTY	CONDITION	MEAN RESULT
Absorption - ASTM C97	48-hour immersion	9.39%
Density - ASTM C97	System average	120.0 lb/ft ³ 1,914 kg/m ³
Flexural - ASTM C880	Lengthwise, dry	600 psi 4.1 MPa
Flexural - ASTM C880	Lengthwise, wet	190 psi 1.3 MPa
Flexural - ASTM C880	Widthwise, dry	520 psi 3.6 MPa
Flexural - ASTM C880	Widthwise, wet	240 psi 1.7 MPa
Flatwise tensile - ASTM C297	Dry, unexposed control	304.9 psi 2.1 MPa

Interpretation for design teams. These are material/system specimen properties, not allowable design stresses or attachment capacities. Wind-load resistance, substrate capacity, adhesive/mortar selection, fastener/lath design where used, movement accommodation and project-specific wall performance remain assembly-design matters.

5. Environmental Durability & Moisture Behavior

EXPOSURE	MEAN FLATWISE TENSILE	CHANGE VS CONTROL	VISUAL CONDITION REPORTED
Control	304.9 psi / 2.1 MPa	—	Baseline
25 freeze-thaw cycles	272.0 psi / 1.9 MPa	-10.8%	No deleterious effects reported
50 cycles	256.5 psi / 1.8 MPa	-15.9%	No deleterious effects reported
75 cycles	279.5 psi / 1.9 MPa	-8.4%	No deleterious effects reported
100 cycles	256.4 psi / 1.8 MPa	-15.9%	No spalling, cracking or delamination reported
10 thermal-shock cycles	312.0 psi / 2.2 MPa	+2.3%	No visible degradation reported

Water permeability is a critical design item. During the modified ASTM C1185 Section 11 evaluation, water droplets were observed on the underside within the first minute. NSI concludes that the panel component cannot be considered watertight and that exterior building-envelope design must integrate appropriate weather-resistant barrier (WRB) considerations.

For exterior specifications, the veneer should therefore be treated as the decorative exterior finish of a drained, code-compliant wall assembly - not as the primary water-control layer. Flashing, WRB continuity, drainage, penetrations, transitions, terminations and sealant joints must be detailed by the project design team.

6. Architect / Specifier Use Notes

The following tested-performance statements are recommended for architectural and technical submittals and align with the laboratory reports included in this document.

TESTED-PERFORMANCE STATEMENTS FOR SUBMITTAL	
●	ASTM E84-2024: FSI 20 / SDI 200; Class A interior wall & ceiling finish category, as reported by SGS.
●	Natural Stone Institute reported no visible degradation after 100 modified freeze-thaw exposure cycles.
●	Thermal shock: 312.0 psi (2.2 MPa) mean flatwise tensile strength after 10 cycles; +2.3% vs. control.
●	ASTM C1185: Panel not watertight as a standalone component; use with a properly designed WRB/drainage assembly.

Product identification. EliteAzure markets the panel as a manufactured / engineered travertine thin stone veneer with embedded reinforcement. Nominal commercial panel dimensions and thickness should be stated separately from laboratory specimen dimensions. Laboratory reports govern the identity and dimensions of the specimens actually tested.

Submittal package recommendation: pair this Technical Data Report with the current EliteAzure Installation Guide, architectural specifications, warranty, current product data sheet, and project-specific wall details. Where the Authority Having Jurisdiction (AHJ), architect, envelope consultant or fire/life-safety consultant requests additional testing, engineering or assembly-specific evidence, their requirements govern.

7. Source Documentation & Document Control

The following laboratory reports are appended in full to evaluate specimen descriptions, test procedures, deviations, individual results, photographs/graphs, conclusions, signatures and laboratory disclaimers directly.

APPENDIX	SOURCE REPORT	PAGES
A	SGS-CSTC Standards Technical Services Co., Ltd., Anji Branch ASTM E84-2024 Test Report No. AJFTS25008768R01_EN Dated January 15, 2026	5
B	Natural Stone Institute Stone Laboratory Test Report No. 25-0174.01-R0 Test dates January 9-February 19, 2026; report date March 3, 2026	17

Report status: EliteAzure Technical Data Report, 2026 edition. Prepared as a professional summary of the attached independent test documentation. In the event of any discrepancy, the signed/issued laboratory report controls. Laboratory reports apply to specimens as tested and should be read with all stated limitations and deviations.

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APPENDIX A

SGSASTME84-2024FireTestReport | AJFTS25008768R01_EN

The following pages reproduce the original laboratory report in full.



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检测
TESTING
CNAS L4743

TEST REPORT

No.: AJFTS25008768R01_EN

Date: Jan 15,2026

Page 1 of 5

Elite Azure LLC

1390 N County Hwy 393, Santa Rosa Beach, FL 32459

Sample Name : Travertine Stone Veneer

Style/Item No. : /

The above sample(s) data and information was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion arising therefrom. Results apply to the sample as received.

SGS Ref. No. : SHIN2512003369CM01

Sample Receiving Date : Dec 16,2025

Testing Period : Dec 16,2025 to Dec 24,2025

Test Required : ASTM E84-2024 Standard Test Method for Surface Burning Characteristics of Building Materials.

Test result(s) : See attached sheet

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd Anji Branch

Eva

Eva Zhang
Approved signatory

Scan to see the report



AJFTS25008768R01
Verification:
check.sgsonline.com.cn



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Member of the SGS Group (SGS SA)

I. Test conducted

This test was conducted in accordance with ASTM E84-2024 Standard Test Method for Surface Burning Characteristics of Building Materials.

II. Introduction

The method, designated as ASTM E84-2024, Standard Method of Test for Surface Burning Characteristics of Building Materials, is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread index (FSI) and smoke developed index (SDI).

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

III. Test procedure

The tunnel is preheated to 65.6

°C (150°F), as measured by the floor-embedded thermocouple located 7.09m

(23.25 ft) downstream of the burner ports, and allowed to cool to 40.6°C (105°F), as measured by the floor-

embedded thermocouple located 3.96m (13 ft) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7.32m (24 ft) long, 304.8mm (12 in) above the floor. The lid is then lowered into place.

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 30 seconds. Flame spread distance versus time is plotted ignoring any flame front recessions. If the area under the curve (A) is less than or equal to 97.5 ft·min, $FSI = 0.515 \cdot A$; if greater, $FSI = 4900 / (195 \cdot A)$.

The test results for smoke shall be plotted and the area under the curve shall be divided by the area under the curve for heptane, multiplied by 100, and rounded to the nearest multiple of five to establish a numerical smoke-developed index (SDI).

IV. Conditioning

Prior to testing, the sample was conditioned, to a constant weight at a temperature of $23 \pm 2.8^\circ\text{C}$ ($73.4 \pm 5^\circ\text{F}$) and at a relative humidity of $50 \pm 5\%$.



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Sample details

Sample description	Travertine Stone Veneer
Color	Multicolor
Thickness	3.4mm
Area density	5.6 kg/m ²
Exposed face	Wood veneer surface

Mounting methods:

The specimen was self-supporting and placed directly on the inner ledges of the tunnel.

The specimens are consisted of 2 pieces of 600mm wide by 3200mm long and 1 piece of 600mm wide by 1100mm long, all sections jointed end-to-end.

The assembly size is 7500mm x 600mm x 3.4mm.

Test results:

Flame Spread Index, FSI	Smoke-developed Index, SDI
20	200

Rating:

The National Fire Protection Association Life Safety Code 101, Chapter 10, Section 10.2.3 Interior Wall and Ceiling Finish Classification, has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with ASTM E84 or UL 723 Method of Test of Surface Burning Characteristics of Building Materials.

International Building Code, Chapter 8, Interior Finishes, Section 803 Wall and Ceiling Finishes, was classified in accordance with ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

NFPA 5000 Building Construction and Safety Code, Chapter 10.2.3.3 Interior Wall and Ceiling Finish Materials Tested in Accordance with ASTM E84 or UL 723.

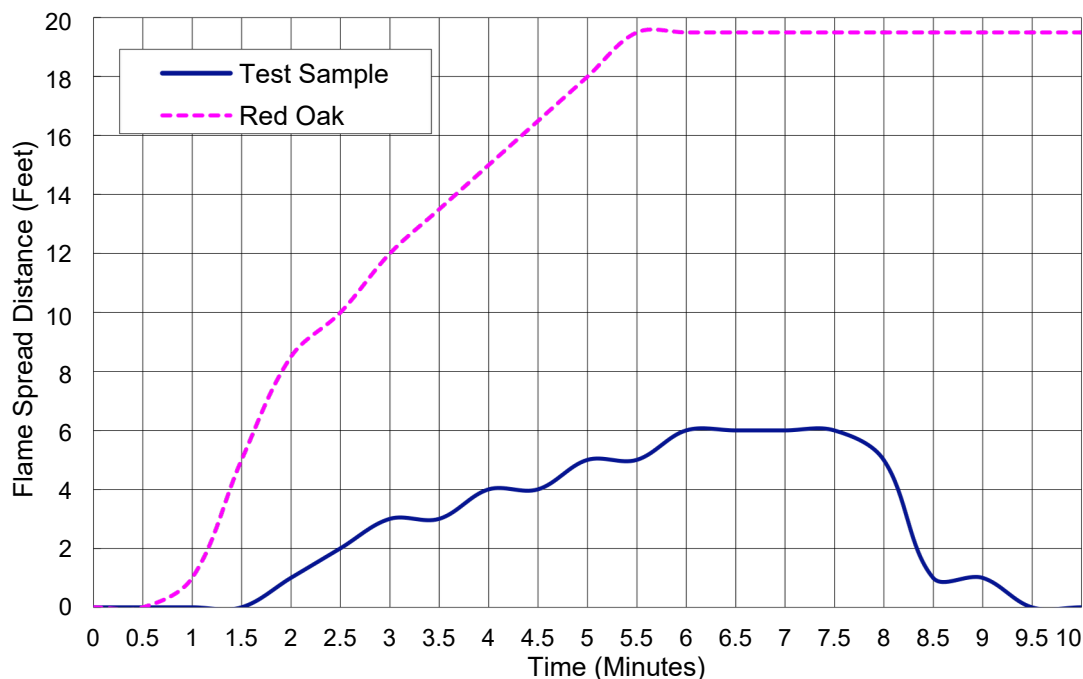
The classifications are as follows:

Index	Class A	Class B	Class C
Flame Spread Index	0-25	26-75	76-200
Smoke-developed Index	0-450	0-450	0-450

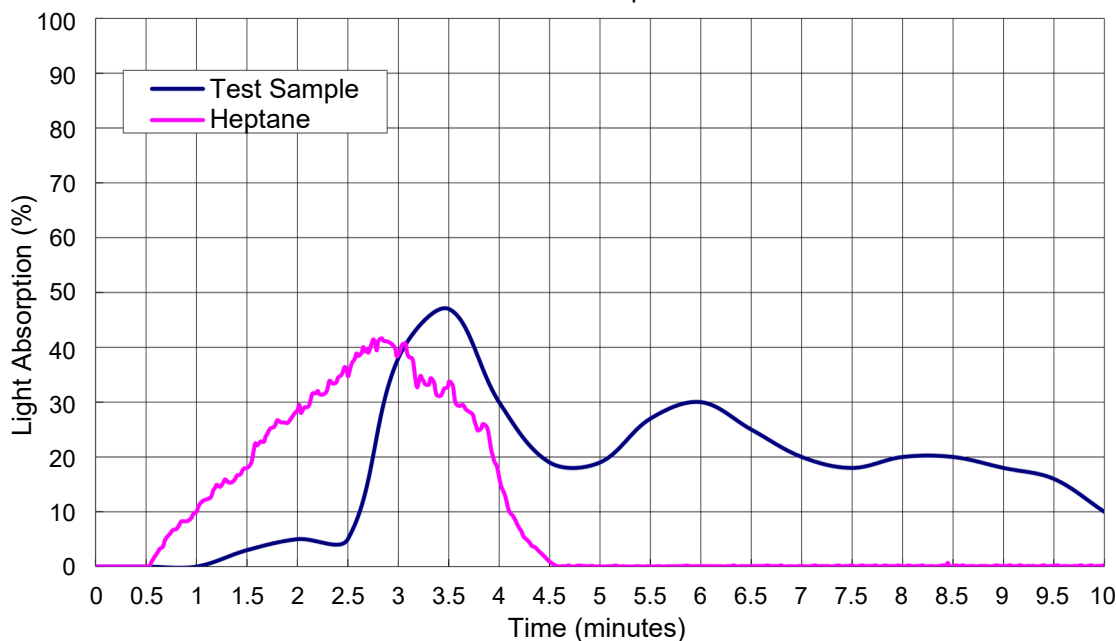
Since the tested sample received a Flame Spread Index 20 and a Smoke-developed Index 200, it would **meet** the requirements of **Class A** interior Wall & Ceiling Finish Category.

Graphical results:

Flame Spread Chart



Smoke Developed Chart



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Observations:

Time to ignition (sec)	71
Time to Max. FS (sec)	346
Maximum FS (feet)	6
Observations	None

Statement: This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

Photo Appendix:



SGS authenticate the photo on original report only

End of Report



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APPENDIX B

NaturalStoneInstituteStoneLaboratory Test Report | 25-0174.01-R0

The following pages reproduce the original laboratory report in full.



STONE LABORATORY TEST REPORT

ReportNo.: 25-0174.01-R0

TestDate(s): 01/09/26 – 02/19/26

Report Date: 03/03/26

Retention Date: 02/19/30

Prepared for: Tatiana Bodiu
EliteAzure LLC
1390 N County Hwy 393
Santa Rosa Beach, FL 32459

Product: Engineered Travertine Thin Veneer System

The Natural Stone Institute (NSI) was contracted by EliteAzure LLC to perform physical properties evaluations for one engineered travertine thin veneer system (with embedded fiber mesh reinforcement). The scope of testing included Absorption, Density, Water Tightness, Flexural Strength, Freeze-Thaw Durability, Engineered Travertine Thin Veneer System Thermal Shock Resistance and flatwise tensile bond strength. All testing was performed at the NSI laboratory located in Oberlin, Ohio.

Methods: The product was evaluated in general accordance with the following test methods:

ASTMC97/C97M-25, Standard Test Method for Absorption and Bulk Specific Gravity of Dimension Stone

ASTM C1185- 23, Standard Test Methods for Sampling and Testing Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards (Section 11 Water Tightness)

ASTM C880/C880M-25, Standard Test Method for Flexural Strength of Dimension Stone

ASTM C666/C666M-15, Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

ASTM C484- 20, Standard Test Method for Thermal Shock Resistance of Glazed Ceramic Tile

ASTM C297/C297M-16 (2004), Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions

Test Materials: The test specimens were provided by EliteAzure LLC and were received in good condition for testing on 12/22/25. Specimens were tested as received other than resizing and preconditioning and/or assembly as required by the applicable test method(s) prior to testing. Full thickness panel production samples were diamond-saw to test dimensions for ASTM C880 flexural strength test, and the ASTM C297 flatwise tensile bond strength evaluation specimens were assembled by NSI personnel after preconditioning exposures as required for testing. Representative test materials shall be retained by the NSI for a period of four years.

Test Witness Record

Name	Company
Clint Eads	NSI
Elena Foley	NSI
Scott Scallorn	NSI
Carmen Taran	NSI
Jeffrey Terleckyj	NSI

Test Procedure(s): Unless otherwise stated, all specimen conditioning and testing was conducted at standard laboratory conditions. Test photos are located on pages 13-16 of this report. Equipment calibration certificates are available upon request.

ASTM C97 – Absorption and Density Evaluation

The absorption and density evaluations were conducted in general accordance with the procedures detailed in ASTM C97. The specimens were dried in a ventilated oven maintained at 40°C (ICN: NSI00012) to a stable mass condition (minimum 48 hours), reacclimated to ambient lab temperature and weighed on an Ohaus digital balance (ICN: NSI00022) for determination of dry condition mass. They were then immersed in filtered water bath maintained at 22°C temperature for 48 hours prior to individual specimen removal, surface drying and determination of wet condition mass. The specimens were then suspended in the water within a wire cage and weighed for determination of immersed condition mass. Absorption (%) and bulk specific gravity were calculated for each specimen as per the equations in ASTM C97, Section 9. Test results were averaged for the test series and are representative of the sum of all system components. As such, these values were not evaluated against the

Deviation: Due to the engineered panel system production dimensions, test specimens were evaluated at alternate dimensions from those specified in ASTM C97 for full-through thickness stone specimens (4.0 in. square x full panel assembly production thickness).

ASTM C1185, Section 11 - Water Tightness

The water tightness evaluation was conducted in general accordance with ASTM C1185, Section 11. One specimen, measuring 24 in. (610 mm) x 20 in. (508 mm), was prepared for testing. The sample was sealed around the perimeter to a waterproof frame and filled with potable water to a height of 0.5 in. (12.5 mm). The prepared specimen was maintained at a temperature of $73 \pm 4^{\circ}\text{F}$ ($23 \pm 2^{\circ}\text{C}$) and relative humidity of $50 \pm 5\%$ and were visually evaluated for an exposure period of 24 hours for evidence of water penetration.

Deviation: Due to thin production thickness and high flexibility of the engineered stone panel, the exposure water head was reduced to 0.5 in. depth from the standard C1185, Section 11 two inch depth in order to properly evaluate water permeability in a rigid/flat panel condition as appropriate for the product's intended usage application.

ASTM C880 – Flexural Strength Evaluation

The Flexural strength evaluation was conducted on an ATS Universal Test Machine Test Machine (ICN: NSI00006) employing a 1.0-kip load cell (ICN: NSI00007) in accordance with the procedures detailed in ASTM C880. Pretest specimen dimensions were measured with a 6" x 0.0005" Digital Caliper (ICN: NSI00008). Specimens were tested in both oven-dry and wet conditions. Dry condition specimens were oven-dried at 40°C for a minimum of 48 hours and cooled to ambient prior to testing. Wet condition specimens were immersed in water for 48 hours prior to individual removal and testing. Specimens were supported at a test span of 7.25 in. and loaded at quarter point (3.625 in. loading span) until failure. Flexural strength was calculated for each specimen as per the equation in ASTM C880, Section 10.1. Test results were averaged for each of the two production direction test series.

Deviation: Due to the high bendability of the engineered travertine thin veneer system material specimens were prepared at a longer span than that specified for an equivalent thickness natural stone product. This allowed the product to express full material flexibility while still permitting NSI personnel to document an actual cracking failure of the panel specimen.

ASTM C666 – Freeze-Thaw Durability Evaluation

The freeze-thaw exposure cycling was conducted in modified ESPEC EPX-4H environmental conditioning chamber (ICN: NSI00015) in accordance with ASTM C666, Procedure B (Freeze-in- Air, Thaw-in-Water). Specimens intended for further properties evaluation (flatwise tensile bond strength) post freeze-thaw cycling were introduced to the exposure chamber. The test specimens were subjected to a total of 100 exposure cycles, each consisting of lowering the temperature of wet specimens from 40°F to 0°F in an air-surround condition and returning to 40°F in an immersed condition. Upon completion of each 25-cycle exposure increment, five specimens were removed from cycling and visually evaluated for breakage of other readily visible deleterious effects. The post-exposure specimens were allowed to come to equilibrium dry condition and assembled into pull tab mockups for evaluation of flatwise tensile strength per ASTM C297 (detailed below).

ASTMC484 - ThermalShockResistanceEvaluation

The thermal shock evaluation was conducted in general accordance with the procedures detailed in ASTM C484. The specimens were cycled between an oven-drying/heating condition of 170°F where they were maintained until a uniform temperature was achieved and a water immersion bath maintained at $59 \pm 9^\circ\text{F}$ where they were held for 5 minutes prior to removal and visual inspection for deleterious effects. A total of ten such cycles were conducted prior to inspection for any readily visible signs of degradation (spalling, cracking, color shift, or other deleterious effects) post exposure. The post-exposure specimens were allowed to come to equilibrium dry condition and assembled into pull tab mockups for evaluation of flatwise tensile strength per ASTM C297 (detailed below).

Deviation: The high temperature condition was adjusted to 170°F to reflect the maximum high-end temperature buildup that a natural travertine stone product would be expected to attain in an exterior installation condition exposed to direct sunlight.

ASTM C297 – Flatwise Tensile Bond Strength Evaluation

The Flatwise Tensile Bond Strength evaluation was conducted on an ATS Universal Test Machine (ICN: NSI00003) employing a 1-kip load cell (ICN: NSI00005) in accordance with the procedures detailed in ASTM C297. Pretest specimen cross-sectional dimensions were measured with a 6" x 0.0005" Digital Caliper (ICN: NSI00008). Both control series and exposure series specimens were evaluated in equilibrium dry condition (achieved by setting the specimens upright to drain post-exposure cycling and conditioning in ambient laboratory conditions ($23 \pm 2^\circ\text{C}$) for a minimum of 72 hours prior to testing). The lab dry specimens were then adhered to aluminum pull blocks with a high-performance epoxy adhesive (Loctite E-00NS). The test assemblies were allowed to fully cure prior to installation within appropriately gimbaled test fixtures on the stage of the UTM machine. Tensile load was applied to the specimen assemblies at a rate of 0.020 in/min until failure was observed. Both peak load and failure mode/location were documented for each specimen. Specimen failure loads were divided by cross-sectional test area as per the calculation in section 13.1 to obtain ultimate flatwise tensile strength and results were averaged for each test series. Post Freeze-Thaw exposure specimen strengths of each exposure series were further evaluated against both the control series values and the preceding freeze-thaw exposure series for evaluation of potential change (%). Likewise, the post thermal shock exposure specimen strength series was evaluated against the control series value for evaluation of potential change (%).

Specimen Details

Test Method	Quantity	Nominal Dimensions	Description
ASTM C97	5Total	4.0 in. square x panel system production thickness	Engineered travertine thin veneer system with a pale - beige tone travertine aesthetic facing and embedded reinforcing mesh
ASTM C1185	3Total	24.0 in. x 20.0 in. x panel system production thickness (610 mm X 508 mm x 5 mm)	
ASTM C880	20Total Lengthwise orientation, Wet: 5 Lengthwise orientation, Dry: 5 Crosswise orientation, Wet: 5 Crosswise orientation, Dry: 5	4.0 in. x 10.0 in. x panel system production thickness	
ASTM C297 (ASTM C666 and ASTM C484)	30 Total Unexposed Control: 5 Post 25 Freeze-Thaw Cycles: 5 Post 50 Freeze-Thaw Cycles: 5 Post 75 Freeze-Thaw Cycles: 5 Post 100 Freeze-Thaw Cycles: 5 Post High Temp Exposure:5	2 in. square x panel system production thickness	

Test Results

ASTM C97 – Absorption & Density Evaluation

Specimen No.	Measured Mass (g)			Absorption (%)	Bulk Specific Gravity	Density	
	Oven-Dry	48-Hour Wetted	Immersed Suspended			(lbs/ft ³)	[kg/m ³]
1	63.72	69.90	36.60	9.70	1.914	119.5	1,914
2	62.76	68.69	35.80	9.45	1.908	119.1	1,908
3	77.58	84.61	44.42	9.06	1.930	120.5	1,930
4	65.08	71.11	37.06	9.27	1.911	119.3	1,911
5	64.36	70.46	36.73	9.48	1.908	119.1	1,908
Series Average				9.39	1.914	120.0	1,914
Standard Deviation				0.24	0.009	0.58	9.18
Coefficient of Variation (%)				2.55	0.479	0.49	0.48

ASTM C1185, Section 11 – Water Permeability

Water Head Depth	Exposure Duration	Visual Observations
0.5 in.	24 hours	Water droplets were observed on the underside of the specimen within the first minute of full exposure.

ASTM C880 – Flexural Strength

Test Condition: Lengthwise Panel Orientation, Wet Condition

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb _f)	Flexural Strength	
No.	Test Condition		Width	Depth		(psi)	[MPa]
L-W-1	Loaded Lengthwise Panel Orientation Wet Condition	7.25	3.94	0.13	3.7	280	2.0
L-W-2			3.98	0.12	1.5	140	1.0
L-W-3			3.97	0.12	1.2	120	0.8
L-W-4			3.96	0.12	1.2	120	0.8
L-W-5			3.92	0.13	3.8	310	2.2
Series Average						190	1.3
Standard Deviation						93	0.7
Coefficient of Variation (%)						48.9	49.3

ASTM C880 – Flexural Strength

Test Condition: Lengthwise Panel Orientation, Dry Condition

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb _f)	Flexural Strength	
No.	Test Condition		Width	Depth		(psi)	[MPa]
L-D-1	Loaded Lengthwise Panel Orientation Dry Condition	7.25	3.95	0.13	7.8	660	4.5
L-D-2			3.94	0.12	6.1	630	4.3
L-D-3			3.93	0.14	8.9	650	4.5
L-D-4			3.96	0.12	5.0	480	3.3
L-D-5			3.95	0.12	5.8	570	4.0
Series Average						600	4.1
Standard Deviation						75	0.5
Coefficient of Variation (%)						12.5	12.4

ASTM C880 – Flexural Strength

Test Condition: Widthwise Panel Orientation, Wet Condition

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb _f)	Flexural Strength	
No.	Test Condition		Width	Depth		(psi)	[MPa]
W-W-1	Loaded	7.25	3.95	0.12	3.3	320	2.2
W-W-2	Widthwise Panel Orientation		4.01	0.19	5.0	180	1.3
W-W-3			4.00	0.19	5.0	180	1.3
W-W-4			Wet Condition	3.97	0.16	4.9	250
W-W-5	4.01			0.16	5.2	260	1.8
Series Average						240	1.7
Standard Deviation						59	0.4
Coefficient of Variation (%)						24.6	24.8

ASTM C880 – Flexural Strength

Test Condition: Widthwise Panel Orientation, Dry Condition

Specimen Details		Support Span (in)	Specimen Dimensions (in)		Failure Load (lb _f)	Flexural Strength	
No.	Test Condition		Width	Depth		(psi)	[MPa]
W-D-1	Loaded	7.25	3.95	0.13	6.1	530	3.7
W-D-2	Widthwise Panel Orientation		3.96	0.21	9.9	310	2.2
W-D-3			4.03	0.14	11.9	860	6.9
W-D-4			4.00	0.15	6.9	420	2.9
W-D-5	Dry Condition		3.98	0.17	10.6	500	3.5
Series Average						520	3.6
Standard Deviation						206	1.4
Coefficient of Variation (%)						39.6	38.8

ASTM C297 – Flatwise Tensile Strength

Test Condition: Dry, Unexposed Control Series

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa)	
C-1	1.98	1.98		1,100	283.5	2.0	Veneer to Backup (Cohesive Failure)
C-2	1.95	2.00	3.90	1,200	307.7	2.1	Veneer to Backup (Cohesive Failure)
C-3	1.98	2.01	3.98	1,262	317.0	2.2	Veneer to Backup (Cohesive Failure)
C-4	2.01	2.01	4.03	1,313	325.8	2.2	Veneer to Backup (Cohesive Failure)
C-5	2.00	2.00	3.99	1,160	290.6	2.0	Veneer to Backup (Cohesive Failure)
Series Average					304.9	2.1	
Standard Deviation					17.7	0.1	
Coefficient of Variation (%)					5.8	5.8	

ASTM C297(ASTM C666) – Flatwise Tensile Strength

Test Condition: Dry Condition, 25-Cycle Freeze/Thaw Series

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa)	
FT25-1	2.01	2.00	4.03	932.5	≥231.4	≥1.6	Fixturing Adhesive (Adhesive Failure) ¹
FT25-2	2.01	2.00	4.02	1,244.3	309.5	2.1	Veneer to Backup (Cohesive Failure)
FT25-3	2.00	1.99	3.99	1,203.1	301.5	2.1	Veneer to Core Bond (Cohesive Failure)
FT25-4	2.00	2.01	4.00	1,049.3	262.3	1.8	Veneer to Core Bond (Cohesive Failure)
FT25-5	2.00	2.02	4.03	1,028.1	255.1	1.8	Veneer to Core Bond (Cohesive Failure)
Series Average					272.0	1.9	
Standard Deviation					32.8	0.2	
Coefficient of Variation (%)					12.1	12.1	

¹Post fixture adhesive failure, panel system Veneer-to-core bond remained intact. Tensile Bond Strength is therefore reported as equal to or greater than the value reported as reported herein.

* No 25-cycle freeze-thaw exposure specimen was observed to express any spalling, color shift, disintegration, or other deleterious effects post-exposure.

ASTM C297(ASTM C666) – Flatwise Tensile Strength

Test Condition: Dry Condition, 50-Cycle Freeze/Thaw Series

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa]	
FT50-1	2.01	2.00	4.03	872.5	216.5	1.5	Veneer to Backup (Cohesive Failure)
FT50-2	2.00	2.01	4.01	931.2	≥232.2	≥1.6	Fixturing Adhesive (Adhesive Failure) ¹
FT50-3	2.01	2.00	4.02	1,235.0	307.2	2.1	Veneer to Backup (Cohesive Failure)
FT50-4	1.99	2.01	4.00	983.7	245.9	1.7	Veneer to Backup (Cohesive Failure)
FT50-5	2.01	2.01	4.03	1,130.0	280.4	1.9	Veneer to Backup (Cohesive Failure)
Series Average					256.5	1.8	
Standard Deviation					36.9	0.3	
Coefficient of Variation (%)					14.4	14.4	

¹Post fixture adhesive failure, panel system Veneer-to-core bond remained intact. Tensile Bond Strength is therefore reported as equal to or greater than the value reported as reported herein.

* No 50-cycle freeze-thaw exposure specimen was observed to express any spalling, color shift, disintegration, or other deleterious effects post-exposure.

ASTM C297(ASTM C666) – Flatwise Tensile Strength

Test Condition: Dry Condition, 75-Cycle Freeze/Thaw Series

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa]	
FT75-1	1.99	2.01	3.99	1174.3	294.3	2.0	Veneer to Backup (Cohesive Failure)
FT75-2	2.02	2.00	4.04	1,066.8	264.1	1.8	Veneer to Backup (Cohesive Failure)
FT75-3	2.01	2.02	4.06	1,163.7	286.6	2.0	Veneer to Backup (Cohesive Failure)
FT75-4	2.01	2.02	4.06	1,010.0	248.8	1.7	Veneer to Core Bond (Cohesive Failure)
FT75-5	2.01	2.01	4.04	1,226.2	303.5	2.1	Veneer to Core Bond (Cohesive Failure)
Series Average					279.5	1.9	
Standard Deviation					22.5	0.2	
Coefficient of Variation (%)					8.1	8.1	

* No 75-cycle freeze-thaw exposure specimen was observed to express any spalling, color shift, disintegration, or other deleterious effects post-exposure.

ASTM C297(ASTM C666) – Flatwise Tensile Strength

Test Condition: Dry Condition, 100-Cycle Freeze/Thaw Series

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa]	
FT100-1	2.00	2.00		964.3	241.7	1.7	Veneer to Backup (Cohesive Failure)
FT100-2	2.01	2.01	4.03	1,190.0	295.3	2.0	Veneer to Backup (Cohesive Failure)
FT100-3	2.01	2.01	4.04	1,216.8	301.2	2.1	Veneer to Backup (Cohesive Failure)
FT100-4	2.00	2.01	4.03	918.7	228.0	1.6	Veneer to Backup (Cohesive Failure)
FT100-5	2.02	2.01	4.06	876.8	216.0	1.5	Veneer to Core Bond (Cohesive Failure)
Series Average					256.4	1.8	
Standard Deviation					39.3	0.3	
Coefficient of Variation (%)					15.3	15.3	

* No 100-cycle freeze-thaw exposure specimen was observed to express any spalling, color shift, disintegration, or other deleterious effects post-exposure.

ASTM C297(ASTM C484) – Flatwise Tensile Strength

Test Condition: Dry Condition, Post Thermal Shock Cycling (10 Cycle) /High Temp. Exposure

Specimen No.	Specimen Dimensions (in)		Loading Area	Failure Load (lb _f)	Flatwise Tensile Strength)		Failure Mode/Location
	Length	Width (in ²)			(psi)	(MPa]	
TS - 1	2.00	2.00		1,061.2	265.3	1.8	Veneer to Backup (Cohesive Failure)
TS - 2	2.01	2.00	4.02	1,251.2	311.2	2.1	Veneer to Backup (Cohesive Failure)
TS - 3	2.00	2.00	4.00	1,406.8	351.7	2.4	Veneer to Backup (Cohesive Failure)
TS - 4	1.98	2.01	3.96	1,236.8	312.3	2.2	Veneer to Backup (Cohesive Failure)
TS - 5	2.00	2.01	4.02	1,285.0	319.7	2.2	Veneer to Backup (Cohesive Failure)
Series Average					312.0	2.2	
Standard Deviation					30.9	0.2	
Coefficient of Variation (%)					9.9	9.9	

* No thermal shock exposure specimen was observed to express any spalling, color shift, disintegration, or other deleterious effects post-exposure.

Conclusions: The test results as presented within this test report reflect the performance of those specimens provided for testing. There were no ASTM performance criteria requirements for this Engineered Travertine Thin Veneer System product, so the average test results are reported as obtained and are summarized in the following table.

Performance Summary				
Physical Property	Test Series Detail		MeanTestValue	
C97 - Absorption (%)			9.39 %	
C97 - Density (lbs/ft ³ [kg/m ³])			120.0 lbs/ft ³	1,914 kg/m ³
C880 - Flexural Strength (psi, [MPa])	Lengthwise Panel Orientation	Wet	190 (psi)	1.3 [MPa]
		Dry	600 (psi)	4.1 [MPa]
	Widthwise Panel Orientation	Wet	240 (psi)	1.7 [MPa]
		Dry	520 (psi)	3.6 [MPa]
ASTM 297 - Flatwise Tensile Bond Strength Evaluation:(psi, [MPa])	0 Cycle (Control)	Dry	304.9 (psi)	2.1 [MPa]
ASTM 297 (ASTM C666) - Post-Freeze- Thaw Exposure (psi, [MPa])	25 Cycles	Dry	272.0 (psi)	1.9[MPa]
	50 Cycles		256.5 (psi)	1.8 [MPa]
	75 Cycles		279.5 (psi)	1.9 [MPa]
	100 Cycles		256.4 (psi)	1.8 [MPa]
ASTM 297 (ASTM C484) - Post Thermal Shock Exposure (psi, [MPa])	10 Cycle	Dry	312.0 (psi)	2.2 [MPa]

ASTM C1185 Water Penetration Test Evaluation Summary:

Water was observed to penetrate the panel system specimen and form droplets shortly after addition to the mockup assembly. As such, this component of an overall cladding system cannot be considered to be watertight, and the rest of the building envelope design would need to integrate appropriate WRB (weather resistant barrier) considerations in exterior applications.

Conclusions: (Continued)

Post Freeze-Thaw and Thermal Shock Comparative Tensile Bond Strength Evaluations

There are no ASTM performance criteria requirements for Engineered Travertine Thin Veneer System product, so the average test results are reported as obtained and are summarized in the following table.

Post ASTM C666 Freeze - Thaw Comparative Tensile Bond Strength Evaluation Summary					
Test Series	Test Condition	Series Mean Tensile Bond Strength (psi)		Comparative Performance Evaluation (%)	
		(psi)	(MPa]	vs. Wet Condition Baseline Reference	vs. Preceding Freeze-Thaw Exposure Set
0 Cycle	Control	304.9	2.1	N/A	N/A
25 Cycles	Post Freeze - Thaw	272.0	1.9	-10.8	N/A
50 Cycles		256.5	1.8	-15.9	-5.7
75 Cycles		279.5	1.9	-8.4	+9.
100 Cycles		256.4	1.8	-15.9	0
HT Exposure	Post Thermal Shock Exposure (High Temp)	312.0	2.2	+2.3	-8.2 N/A

ASTM C297 Flatwise Tensile Bond Strength Evaluation Summary:

There were no criteria provided for ASTM C297, either pre or post environmental exposure, so results are reported as obtained.

Freeze-Thaw Durability

No post-exposure freeze-thaw specimen showed any readily visible signs of degradation post-exposure (spalling, cracking, delamination). The mean documented strength variance between the wet control series and post-100 cycle freeze-thaw exposure cycle series was -15.9%. While incremental post-exposure bond strength values varied up and down between freeze-thaw test series and at completion of full exposure, values appear to have stabilized early in exposure cycling and in no instance did the specimens strength loss meet or exceed 20%.

Thermal Shock Exposure

No post-exposure thermal-shock specimen showed any readily visible signs of degradation post-exposure. The mean documented strength variance between the post-10 cycle exposure series and the corresponding condition control series was +2.3%. As such, the product appeared to be unaffected by the thermal shock exposure.

It has been our pleasure to provide this product testing service for your project. Please do not hesitate to contact us if you have any questions or require additional information. Contact information is listed below.

Respectfully submitted,



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Revision Log

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0	03/03/26	N/A	Initial report release

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Photographs:



PhotoNo.1
ASTM C97 – Test Setup



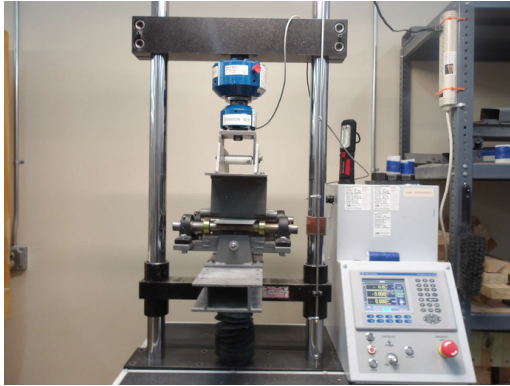
PhotoNo.2
ASTM C97 – Absorption & Density Test
(Dry Mass Determination Stage Depicted)



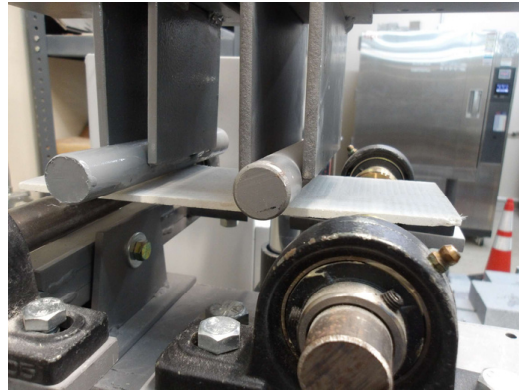
PhotoNo.3
ASTM C1185 Water Penetration
Evaluation–Test Setup



PhotoNo.4
ASTM C1185 – Mockup Specimen
Underside Water Droplet Formation Detail



PhotoNo.5
ASTM C880 – Flexural Strength
Test Setup



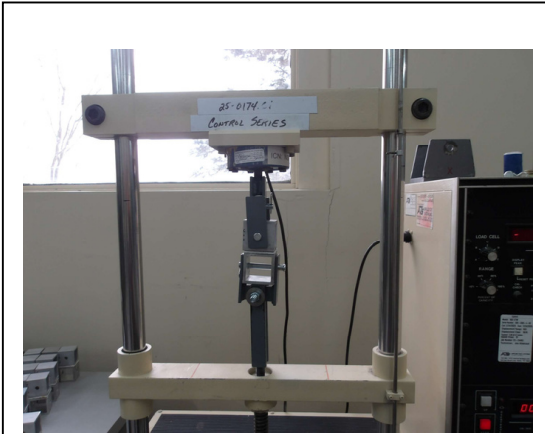
PhotoNo.6
ASTM C880 – Representative Specimen
LoadingDetail



PhotoNo.7
ASTM C880 – Representative
Specimen Failure Mode: Widthwise
Orientation (Dry Condition)



PhotoNo.8
ASTM C880 – Representative
Specimen Failure Mode: Lengthwise
Orientation (Wet Condition)



PhotoNo. 9
ASTM C297 – Test Setup



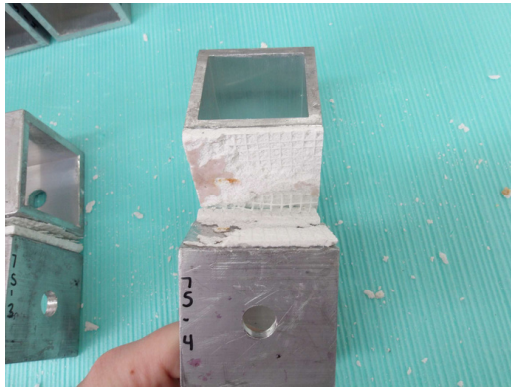
PhotoNo. 10
ASTM C297 – Load Application Fixturing Detail



PhotoNo. 11
ASTM C297 – Representative Post-25 Cycle Freeze/Thaw Exposure Cohesive Failure Mode



PhotoNo. 12
ASTM C297 – Representative Post-50 Cycle Freeze/Thaw Exposure Cohesive Failure Mode



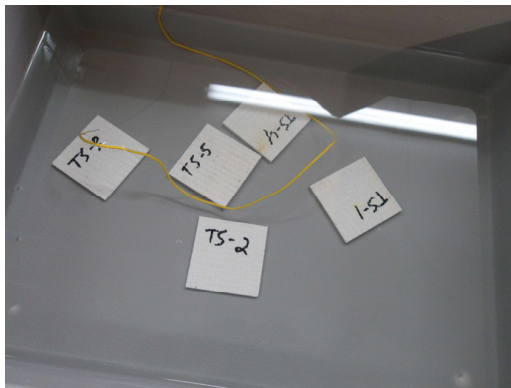
PhotoNo. 13

ASTM C297 – Post-75 Cycle Freeze/Thaw Exposure Cohesive Failure Mode



PhotoNo. 14

ASTM C297 – Representative Post-100 Cycle Freeze/Thaw Exposure Cohesive Failure Mode



PhotoNo. 15

ASTM C484 – 10 Cycle Thermal Shock Test Setup (Rapid Cooling Condition Depicted)



PhotoNo. 16

ASTM C297/ASTM C484 – Representative Post-10 Cycle Thermal Shock Cohesive Failure Mode